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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,939	01/30/2004	Fumito Nariyuki	FS-F03228-01	4131

37398 7590 07/25/2007

TAIYO CORPORATION
401 HOLLAND LANE
#407
ALEXANDRIA, VA 22314

EXAMINER	
CHEA, THORL	
ART UNIT	PAPER NUMBER
1752	

MAIL DATE	DELIVERY MODE
07/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,939	NARIYUKI, FUMITO	
	Examiner	Art Unit	
	Thorl Chea	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-13 and 21-24, 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,21-24 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 2, 2007 has been entered.

2. This office action is responsive to the communication on November 14, 2006; claims 1-7, 9-14, 21-26 are pending in this instant application; claims 8, 15-20 have been canceled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7, 9-12, 14, 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (US Patent No. 6,210,983), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,656,419).

Okada et al disclose a process for forming image in a photothermographic material comprising an image-wise exposing to radiation source and thermally developing the image-wised exposed material with a developing time from 1 to 180 second at the temperature 80 °C to 250 °C (column 44, lines 42-53). The photothermographic material contains an silver salt of an organic acid including silver behenate (column 37, lines 20-42), a photosensitive silver halide, a reducing

agent and a compound of the formula X-L_1-D wherein D is an electron donative group, X is an adsorption promoting group to silver halide, and L_1 is a valent bond or a linking group (abstract and columns 3-22). The silver halide includes silver iodide and silver iodobromide having silver iodide content 0.1 to 40 mole % (column 36, lines 3-17). The silver halide should preferably have a smaller grain size for the purpose of minimizing white turbidity after image formation. preferably 0.01 micron to 0.15 micron (column 35, lines 37-51). The preferred reducing agent is hindered phenol and bisphenols (column 38, lines 45-50 and column 39, lines 30-33). See also toning agent is disclosed in column 39, lines 40-68 to column 40, lines 1-20; the mecapto compound for retarding or accelerating development in column 40, lines 20-25; the ultra-high contrast agent such as hydrazine in column 42, lines 66-67 to column 43, lines 1-43; the matting agent in column 26, lines 21-67; and antifoggants including halogen-substituted organic compound in column 42, lines 27-53. Okada discloses the silver halide including silver iodide and silver iodobromide having silver iodide content from 0.1 to 40 mole % and the a compound of formula X-L_1-D. The silver iodide and silver iodide overlaps the scope of silver halide having silver iodide content of 40 mole % to 100 mole % present in the claimed invention. The scope of silver iodide in Okada et al is considered as silver halide having 100 mole % of iodide and the upper limit of silver iodide content (40 mole %) in silver iodobromide taught in Okada et al overlaps 40 mole % of the silver iodide content claimed in the present claimed invention. The compound of formula (I) and the scope of the compound presented in claim 24 are within the scope of generic formula X-L_1-D taught in Okada et al.

Siga disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed

that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." Toya et al disclose polyhalogenate compound and the bisphenols reducing agent is taught in column 28, claims 14-15 and the is disclosed in column 20, formula (A).

Okada discloses a process of developing a heat developable material developing time from 1 to 180 second at the temperature 80 °C to 250 °C, which encompasses the scope of developing time of 1 to 12 second, claimed in the present claimed process. Moreover, the material of Okada et al contains silver halide inducing silver iodide; the compound having functional property similar to that of the compound of formula (I), and the antifoggants including halogen-substituted organic compound. The silver halide having iodide content from 40 to 100 mole % including the function of silver iodide has been also known in Siga et al . The halogenated antifoggant compound also has been known in Toya. Therefore, the material of the present claimed invention contains the additives conventionally used in the photothermographic material. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use silver halide having high iodide such as using the silver

iodide suggested in Okada et al or the silver halide having iodide content taught in Siga et al in combination with the use of known antifoggants taught in Toya et al, and use thereof in the process of developing the material within the developing time from 1 to 180 second at the temperature 80 °C to 250 °C with an expectation of achieving having good print-out and low fog.

5. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Okada et al (US Patent No. 6,210,983), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,656,419) as applied to claims 1-7, 9-12, 14, 21-26 above, and further in view of Toya et al (US Patent No. 5,998,126) . Okada et al may not disclose the use of laser beam that has light emission peak intensity within a wavelength range from 350 to 450 nm in claim 13, but Toya et al in column 2, lines 1-12 disclose to expose the photothermographic material using semiconductor diode producing wavelength from 300 nm to less than 700 nm. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use laser available inexpensive semiconductor laser diode taught in Toya et al with a reasonable expectation of little obstruction encountered in reading a transmission image even when a sensitizing dye or dyesstuff having λmax in this wavelength left in the photographic material.

Response to Arguments

6. Applicant's arguments filed on July 2, 2007 have been fully considered but they are not persuasive because of the reason set forth in the rejection above and the response to the applicants'argument provided in the Final Office Action on February 5, 2007.

It is the Examiner's position that the composition of the claimed material used in the present claimed process is a combination of additives useful in photothermographic material, and it has

been known to use heat a photothermographic material within developing time from 1 to 180 second at the temperature 80 °C to 250 °C such as shown in the applied prior art of record above. The invention as claimed is related to the process of thermally the imagewise-exposed photothermographic material with a developing time of 1 to 12 seconds. The developing temperature is not recited therein. Therefore, it is assumed that the developing temperature encompass any temperature known in developing temperature including from 80 °C to 250 °C taught in Okada et al and the applied prior art above. The applicants appear to argue that the claimed process containing the step of developing temperature of thermally the imagewise-exposed photothermographic material with a developing time of 1 to 12 seconds using the material having composition as claimed provide an expected results such as the "unprocessed Storabilility" provided in different declaration on August 4, 2005; March 20, 2006 and November 14, 2006.

The argument appears to not well-taken. The specification disclosure on page 5, first paragraph discloses "an object of the present invention is to provide a novel photothermographic material having an improved printout property and an improved unprocessed stock storability.". Page 196, under "Evaluation of photographic property", discloses that "In an exposure unit of a Fuji medical dry laser image DRYPIX 7000, a semiconductor laser NLHV3000E, manufactured by Nichia Chemical Industries Co., was mounted as a laser light source and a beam diameter was narrowed to 100 microns. Each sample was exposed for 10^{-6} seconds with an illumination intensity of the laser light on the surface of the photothermographic material controlled at 0 and within a range of 1 to 100 mW/mm^2. The laser had an oscillation wavelength of 405 nm. A thermal development was executed with four panel heaters set at 109°-121°-122°C, for a time

shown in Table 2 by controlling a transportation speed. The obtained image was evaluated with a densitometer.

Page 196, last paragraph discloses " *Evaluation of unprocessed stock storability* : An unprocessed stock storability was evaluated by measuring a sensitivity after a storage for 30 days at 40°C and 40 %RH. The sensitivity is a reciprocal of an exposure amount required for obtaining a density which is higher by 0.5 than a fog density, and is represented by a relative value, taking a sensitivity of each sample in a fresh state as 100.

Page 197, discloses "*Evaluation of image storability:* A sample after thermal development was let to stand for 30 days in an environment of 25°C, 60 %RH under a fluorescent lamp (illumination intensity 200 lux). A fog density (Drain1) immediately after the thermal development and a fog density (Dmin2) after standing in the aforementioned environment were measured and an increase (ΔDmin)

Therefore, the improvement of the "unprocessed stock storabitity" property is not inherently related to the process, but to the composition of the photothermographic material; and the image storability is also related to the photothermographic material, rather than the time of heating of the imagewise-exposed photothermographic material. There is no clear nexus between the improvement of the process and the improvement of the stability of the photothermographic material. The step of heating the imagewise exposed material has been known in the formation of an image, and the worker of ordinary skill in the art would adjust the temperature and heating time accordingly to the composition of the photothermographic material with an expectation of achieving an image.

The process shown in the specification disclosure is related to the process exemplified in Example 1 wherein the imagewise-exposed photothermographic material is heated with four panel heaters set at 109 °C -121 °C -122 °C , and the photothermographic material is exposed for 10^{-6} seconds with an illumination intensity of the laser light on the surface of the photothermographic material controlled at 0 and within a range of 1 to 100 mW/mm^2. The laser had an oscillation wavelength of 405 nm. This process is obtained using a known Fuji medical dry laser image DRYPIX 7000, a semiconductor laser NLHV3000E, manufactured by Nichia Chemical Industries Co.

In the Declaration submitted on November, 14, 2006, the applicants, first provide the comparing of the results between the material containing the compounds disclosed in Okada, compounds 2, 6, 17, 20, provide low % of unprocessed storability in comparison with compounds 20, 28 , 6, 17, 73, 2, 11, 32, 34. The applicants conclude that the compounds 20, 28 , 6, 17, 73, 2, 11, 32, 34 provide better results in term of unprocessed storability even though the exposed material is heated with same thermal developing time. Second, the applicants provide the results associated with the material containing the compounds 20, 28, 6, 17, 73, 2, 11, 32, 34 while using the thermal developing time in scope and outside the scope of the claimed thermal developing time. The applicants conclude that the thermal developing time claimed in the present claimed invention is critical since it provide a material with an improved unprocessed storability.

It is the Examiner's position that the Declaration fails to overcome the established prima facie case of obviousness rejection. The demonstration appears to be related to the material rather than the process, while the claimed invention is related to a claiming of method. In order to show that

unexpected results of the claimed method over that taught in Okada et al, the method having steps taught in the applied prior art should be compared with the method claimed in the present claimed invention, while same material used in both processes. There is no different between the claimed compound of formula (I) and that shown in Oka et al. See for instance the compound (11) of the claimed invention VS compound and the compound (11) of Okada in column 17; or the compound of general formula B_2, B_3 of the present invention VS the compound (7), (8), (11) exemplified in Okada et al. The compound taught in Okada has similar functional group and would expected to show similar characteristic. The processing step as claimed is not within the scope used in the specification and the Declaration. See the scope of "Evaluation of photographic property" shown above. The results cannot be achieved by duration of heating alone, but the exposure, method of heating and heating temperature. The Declaration is not consistent with the specification disclosure. The specification shown in Tables 1 and 2 shows the "unprocessed storability" is based on the amount of silver halide with silver iodide content or more, rather than the use in combination with the common additives such as the compound of formula (I). See the results shown in Table 2 wherein the "unprocessed storability" is similar or higher that the results shown in the Declaration wherein the compound of formula (I) incorporated in the material. Therefore, the Declaration lacks probative value. The value of "unprocessed storability" shown in the Declaration expected to be having of different value since duration of heating is different and the material with different composition would show different characteristic.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea
2007-07-19

Thorl Chea
Primary Examiner
Art Unit 1752